

WHAT IS CLAIMED IS:

1. An apparatus for facilitating viewing of an object by human eye, said apparatus comprising:
  - a holder mechanism comprising a support portion having opposing first and second support surfaces;
  - at least one light source disposed on said holder mechanism first surface to illuminate at least a portion of the object;
  - at least one electronic camera unit disposed on said holder mechanism first surface, said camera being operative to record at least one image of the object;
  - at least one image processor module in electrical communication with said camera unit to format said recorded image for display;
  - at least one image display device having a display region, said display device disposed on said holder mechanism second surface and in electrical communication with said image processor module to display said formatted image on said display region; and
  - at least one user-interface control mechanism disposed on said holder mechanism and in electrical communication with said image processor module for controlling the operations of said module to regulate display of the image by the display device.
2. The apparatus of Claim 1 further comprising:
  - at least one power source housed in said holder mechanism to provide operational power to at least one of said camera unit, image processor system light sources and image display device.
3. The apparatus of Claim 1 wherein said control mechanism is to regulate at least one of a magnification and an illumination intensity of the image displayed by the display device.

4. The apparatus of Claim 1 wherein said control mechanism is to regulate the display of the image by the display device in response to display adjustments by a user.

5. The apparatus of Claim 1 said holder mechanism further comprising:

at least one handle portion connected to said support portion.

6. The apparatus of Claim 1 wherein said handle portion is integrally connected to said support portion.

7. The apparatus of Claim 1 wherein said handle portion is pivotally connected to said support portion.

8. The apparatus of Claim 1 wherein said light source portion is rotatably connected to said support portion.

9. The apparatus of Claim 1 wherein said camera unit is a charge-coupled device (CCD) camera unit.

10. The apparatus of Claim 1 wherein said display device is a liquid crystal display (LCD) device.

11. The apparatus of Claim 1 wherein said control mechanism is disposed on said support portion.

12. The apparatus of Claim 5 wherein said control mechanism is disposed on said handle portion.

13. The apparatus of Claim 1 said control mechanism further comprising:

at least one mode selection device for browsing and selecting at least one operation of said image processor module.

14. The apparatus of Claim 13 wherein said mode selection device is a manual input button.

15. The apparatus of Claim 13 wherein said mode selection device is a finger operated adjusting rolling switch.

16. The apparatus of Claim 13 wherein said mode selection device is a finger operated adjusting sliding

switch.

17. The apparatus of Claim 13 wherein said mode selection device is a graphic user interface device.

18. The apparatus of Claim 13 wherein said mode selection device is a graphic user interface device displayed on a portion of said display region.

19. The apparatus of Claim 13 wherein said mode selection device is a voice input device.

20. The apparatus of Claim 2 wherein said power source is housed in a handle portion of said holder mechanism wherein said handle portion is connected to said support portion.

21. The apparatus of Claim 2 wherein said power source is at least one of a battery unit and an externally connected power source.

22. The apparatus of Claim 1, said image processor unit comprising:

at least one processor system in electrical communication with, to receive operational data from and to control the operations of at least one of said control mechanism, said camera unit, said light sources and said display device based on at least one predetermined instruction; and

at least one electronic image memory storage medium for storage and retrieval of said predetermined instruction by said processor system.

23. The apparatus of Claim 22 wherein said predetermined instruction is a user-inputted instruction received from said control mechanism.

24. The apparatus of Claim 22 wherein said predetermined instruction is said recorded image.

25. The apparatus of Claim 22 wherein said predetermined instruction is said formatted image.

26. The apparatus of Claim 22 wherein said predetermined instruction includes instructions to adjust

at least one of a magnification level, an illumination intensity, an image enhancement and a focusing resolution level of said displayed image.

27. The apparatus of Claim 22 wherein said predetermined instruction includes instructions to adjust at least one of a focusing characteristic of said camera unit and the illumination intensity of said light source.

28. The apparatus of Claim 22 wherein said image processing module is a programmable image processing module.

29. The apparatus of Claim 22 further comprising:

at least one optical alpha-numeric character recognition module to recognize at least one of a word and a number in said image;

at least one voice synthesizer module to output sound patterns corresponding to a pronunciation of said recognized word and number.

30. The apparatus of Claim 26 wherein said image enhancement includes at least one of an adjustment contrast and brightness, a noise elimination, a color re-mapping, an inverse video displaying, an illumination equalization mode, image shifting, image stabilization, and image freezing.

31. The apparatus of Claim 30 wherein said noise elimination includes filtering of undesired features of said object.

32. The apparatus of Claim 30 wherein said inverse video displaying includes display text wherein the colors of text and background are switched.

33. The apparatus of Claim 30 wherein said illumination equalization includes modification of illumination brightness over a selected display area to compensate for an non-ideal positioning of said light source.

34. The apparatus of Claim 1 wherein said apparatus is a portable apparatus.